All answers must be in correction notation and labeled when appropriate.

<table>
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<th>Question</th>
<th>Answer</th>
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<tr>
<td>1. Write a function rule for a translation of 2 units up and 4 units to the left.</td>
<td>((x, y) \rightarrow (x - 4, y + 2))</td>
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<tr>
<td>2. Consider (\triangle PQR) with coordinates (P(-2, 5)), (Q(3, 0)), and (R(7, -3)). State the coordinate (R') after the reflection over the line (y = x).</td>
<td>(R'(-3, 7))</td>
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<tr>
<td>3. A point is located at ((2, -3)). Identify the reflection that maps that point to ((2, 3)).</td>
<td>(r_y = 0) or (r_{x-axis})</td>
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<td>4. Identify the inverse of the transformation: (T_{(1,-3)})</td>
<td>(T_{(-1, 3)})</td>
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</table>
| 5. Fill in the blank with the correct vocabulary to create a true statement. (Must get all answers correct for the points.) | A) The composition of two reflections can be represented as a single ___Translation____ or a single ___Rotation____.  
B) The composition of two rotations can be represented as a single ___Rotation____. |
| 6. Identify the single rigid motion that performs the same mapping as this composition: \(R_{2, 1}, 90^\circ(R_{2, 1}, 180^\circ)\) | \(R_{(2, 1), 270^\circ}\) or \(R_{(2, 1), -90^\circ}\)                   |
| 7. A point is located at \((2, -1)\). Identify a reflection that maps that point to \((2, 9)\). | \(r_y = 4\)                                                              |
| 8. Which function describes a rigid motion of the square that would result in the image sharing a vertex with the pre-image? Select all that apply. | A. \(r_x = -1\)  
B. \(r_x = 0\)  
C. \(r_x = 3\)  
D. \(r_x = -3\)  
E. \(R_{0, 180^\circ}\) |
| 9. Describe the rotation (in proper notation) that maps figure B onto Figure A. | \(R_{1, 0}, 90^\circ\)  
\(R_{(1, 0), 90^\circ}\) }
10. Under a reflection, vertex C from the triangle shown maps to (1, -2). What is the line of reflection? *(Hint: write as an equation)*

- \[ x = -1 \]

11. Write the notation for this composition of transformations: a reflection about the line \( y = 1 \), followed by a rotation of -90 degrees about the origin.

- \[ R_{O,-90^\circ}(r_y = 1) \]

12. An arrow is placed with its base at (1,1) and its tip at (1,5). Identify the positions of the images base and tip under the composition \( r_{(x=0)}(R_{(1,0),90^\circ}) \).

- Base: (0, 0)
- Tip: (4, 0)

13. Which combination shows that triangles A and B are congruent?

- A. \( T_{(2,3)}(R_{(-2,0),90^\circ}(A)) \)
- B. \( R_{(0,90^\circ)}(r_{(y = 1.5)}(A)) \)
- C. \( r_{(x = 0)}(r_{(y = 1.5)}(A)) \)
- D. \( T_{(0,5)}(R_{(0,-2),-90^\circ}(A)) \)

14. Identify the single rigid motion that performs the same mapping as the composition: \( T_{(1,-6)}(T_{(-1,8)}) \)

- \( T_{(0,2)} \)

15. Consider the figures in the diagram. Complete the transformation to show that the two triangles are congruent.

- A reflection of \( \triangle ABC \) over ____line \( m \)___.

16. List all capital letters with exactly one line of symmetry.

- A, B, C, D, E, K, M, T, U, V, W, Y

17. In the diagram below, Figure IV is the rotated image of Figure III. Identify the rotation shown.

- \( R_{(-2,-3),-90^\circ} \)

18. Identify the single rigid motion that performs the same mapping as the composition: \( r_{(x=-4)}(R_{(x=2)}) \)

- \( T_{(-12,0)} \)